

Senior Project Proposal

Department of Computer Science

Calvin University

Title: LGWI Clean Water Solutions Application

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Background and Problem

Throughout the world, millions of people are still without clean water. Life Giving Water International is working to help solve this problem by providing clean water access to those in need. Managing these systems can be tedious especially due to the limited access to certain locations.

Brief Description of Solution Being Provided

We will be developing an application to help the management of these systems and their functionality. Our focus will be around tracking the water usage of pumps that have been installed in Ecuador. The major goal will be on calculating and measuring water usage for individual homes to accurately charge customers. On the client side we will be creating a system to scan water meters and calculate the total charge for users. Data will be collected and stored to be uploaded in the future. The server side will mainly store and upload data to a server allowing for easy access and viewing of the water meter data.

Research or Development Objective

This project is mainly going to be a software development project. We will be creating an app with client-side and server-side features that are both useful for and usable by our mentors and clients. The calculations will be handled on client side devices while receipts and system management will be uploaded to the server.

Your Interest and Qualifications

As computer science majors at Calvin we strive to make a difference in the world. Working with LGWI caught our attention due to the practical and meaningful impact that our project will have. Previous experience with software development applications have prepared us for development of a full stack application. Knowledge of work management systems and communication will be key in our success of this project. Our plans as of now are to meet weekly to update each other on progress and ideas. When development starts we will be meeting twice a week to work on our design goals.

Collaboration with Advisor, Outside Experts and Users

We will be collaborating with a team of experts from LGWI. Mark DeHaan and Chris Visscher are both Civil Engineers who work full time in Ecuador with LGWI. They are both very passionate about clean water systems and providing clean water services for those in need. Mark is a Calvin alumnus who studied Civil and Environmental Engineering and has been involved

with the CWI for many years. LGWI is a Christian organization whose mission is to empower communities by caring for those in need.

Resources Required

At this point there are no extra resources that will be needed to complete this application.